

A NEW *CITHAREXYLUM* (VERBENACEAE) FROM ISLA SOCORRO, REVILLAGIGEDO ARCHIPELAGO, MEXICO

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ABSTRACT

A new species of Verbenaceae, *Citharexylum danirae* León de la Luz et Chiang, is described and illustrated. It is known only from the type collection at the north face of Evermann volcano in the remote Socorro Island, the largest of the Revillagigedo Archipelago, in the tropical Mexican Pacific Ocean. Its relationship to *C. caudatum* L. and *C. affine* D. Don is discussed.

RESUMEN

Se describe e ilustra una nueva especie de la familia de las Verbenáceas, *Citharexylum danirae* León de la Luz et Chiang. Hasta hoy es sólo conocida del ejemplar tipo, procedente de la vertiente norte del volcán Evermann, en la remota Isla Socorro, en el archipiélago de las Islas Revillagigedo, ubicada en el Pacífico tropical de México. Se discute su relación con *C. caudatum* L. y con *C. affine* D. Don.

Socorro Island is part of the Revillagigedo Archipelago, a group of three islands scattered off the tropical west coast of Mexico (18°45'N, 111°00'W). Socorro is located 400 km south of the southern tip of the Baja California peninsula, and about 580 km west-southwest of Cabo Corrientes, Jalisco, on the nearest west central Mexican mainland coast.

The floristic knowledge of the island and the archipelago has grown continuously since the late 19th century as result from sporadic botanical explorations, mainly describing new taxa and distributional records. Several floristic checklists also have been published (Johnston 1931; Miranda 1960; Levin & Moran 1989). The latter is the most complete, cataloguing the flora of the islands, particularly that of Socorro, which is the largest and more diverse in species (160 taxa of vascular plants), plant communities, and the richest in plant endemism (27 percent).

From three botanical explorations to Socorro Island by the first author (from 1988–1990), almost 180 duplicates were sent to Dr. Geoffrey Levin, then botanist at the San Diego Museum of Natural History (SD) and head of the Vascular Flora of Socorro Island Project, to contribute to the floristic compilation then in preparation. Of these collections, twelve taxa represent new distributional records (Levin & Moran 1989). The expeditions provided a total of 25

collecting days on Socorro Island that included the first-ever collections on the north side of Evermann Volcano (1150 m).

The collections made on February 25th 1990 on the north face of Evermann Volcano revealed several shrubby species, such as *Spermacoce nesiotica* (B.L. Rob.) G. A. Levin, *Chiococca alba* (L.) Hitchc., *Dodonaea viscosa* Jacq., *Zanthoxylum insulare* Rose, *Lepechinia hastata* (A. Gray) Epling subsp. *socorrensis* Moran, and *Rhamnus sharpii* M. & L.A. Johnston. These species occur in the scrubland that covers the middle elevations of the island. A terrestrial orchid (cf. *Habenaria*), collected in its vegetative stage, was never identified and represented the only member of this family with this habit on the island. Another collection (*León de la Luz 4518*) had remained undetermined in the HCIB herbarium until recently. As it is known only from one specimen it is presumed to be rare on the island. It was collected at 805 m, the highest part of the Mixed or Tropical Scrubland plant community, according to Miranda (1960) and León de la Luz et al. (1996).

The specimen was initially thought to have only immature flowers, but a recent thorough examination revealed a couple of mature flowers, whose dissection enabled its placement as *Citharexylum*. This is only the third genus thus recorded for Verbenaceae on Socorro Island; the other being *Verbena* and *Lantana* (Levin & Moran 1989). The specimen was compared with descriptions of *Citharexylum* species in floras and monographs available for Mexico: Veracruz (Nash & Nee 1984), the west-central sector (Rzedowski & Rzedowski 2002), the Sonoran Desert (Shreve & Wiggins 1964) the Baja California Peninsula (Wiggins 1980), and the material examined by Moldenke (1958). Although seed and fruiting material was unavailable, it was determined that the specimen represent a new species differing from other taxa in both leaf and flower structure. The new species is herein described.

Citharexylum danirae León de la Luz & Chiang, sp. nov. (**Fig. 1**). TYPE MEXICO. ISLA

SOCORRO: Revillagigedo Archipelago: N side slopes of Evermann Volcano, mixed or tropical scrubland, 805 m elevation, 25 Feb 1990, José Luis León de la Luz 4518 (HOLOTYPE HCIB).

Frutex ad 3 m altus, folia opposita 7–10 cm longa, 4–6 cm lata, ovata, apice acuta, glabrata; inflorescentiae racemosae 12–18 cm longae, pedicellis 1–2 mm longis, bracteatis, bracteis 2 mm longis, foliaceis, oblongo-lanceolatis; corolla albidis, 5 mm longa; calycis tubo ca. 4 mm sepalis parvis, petalis parvis; stamina robusta ca. 1.5 mm longa, filamenta parva, robusta; ovarium pyriforme, robustum, stylo parvo, ad apicem luncato, lobis 2, stigmatosis, parvis; fructus et semina ignota.

Shrub to 3 m high, stems tetragonal, nodes with prominent leaf and bundle scars; **leaves** opposite, ovate, 4–6 cm wide, acute acuminate at the apex, rounded at the base, the margins entire, the leaf blades subglabrous with sparse simple trichomes (less than 0.5 mm), the upper surface lustrous when young, less so with age, with 3–4(–5) parallel veins per side; petioles 15–25 mm long, canaliculate; **racemes** **terminal**, few branched, 12–18 cm in length, 20–35

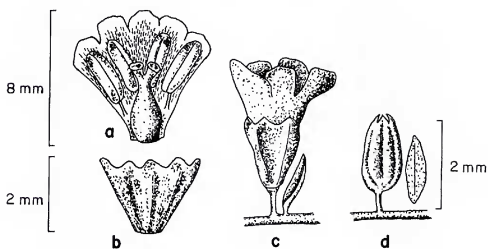


FIG. 1. *Citharexylum danirae* León de la Luz & Chiang. **a)** Dissection of calyx and corolla, note robust pistil and stamens. **b)** Flower. **c)** Flower bud and bract. **d)** Flowering branch.

TABLE 1. Morphological comparison between *Citharexylum danirae*, *C. caudatum*, and *C. affine*.

Characters	<i>Citharexylum caudatum</i>	<i>C. affine</i>	<i>C. danirae</i>
Habit	shrubby to arborescent	shrubby to arborescent	shrubby
Leaf size	8–17 cm × 2–6 cm	6–30 cm × 3–14 cm	7–10 cm × 4–6 cm
Leaf shape	oblong-elliptic	ovate, lanceolate-oblong	ovate
Leaf apex	short acuminate to acute	acuminate	abruptly acuminate
Leaf base	cuneate	rounded	rounded
Petioles length	0.5–2 cm	1–8 cm	1.5–2.5 cm
Inflorescences	racemes axillary and terminal	racemes terminal	racemes terminal
Pedicels	1–3 mm	1 mm	1–2 mm
Bracts length	up to 1 mm	up to 1 mm	2–2.5 mm
Corolla	white, 3–4 mm	pale blue, 4–6 mm	white-greenish, 5 mm
Corolla lobes	1–2 mm, glabrous	2–4 mm, glabrescent	1 mm, glabrous
Pistil	slender	slender	stout
Anthers	slender	slender	stout (\pm 1.5 mm)
Calyx at anthesis	tubular-campanulate, 2–3.5 mm	cyathiform, 3 mm	tubular, 4 mm

flowered; pedicels usually alternate along the axis, 1–2 mm; bracts oblong-lanceolate, up to 2 mm, longer than the pedicels; **calyces** to 4 mm in length at anthesis, shallowly 5 toothed, 5 nerved; **corollas** white greenish, twice as long as the calyx tubes, \pm 5 mm in length, the short lobes 5, entire, not ciliate; stamens 4, anthers stout, 1.5 mm; staminode 1; ovary stout, ovoid, stout, styles 2, short; stigmas discoid-capitate; mature fruit and seeds unknown.

Etymology.—The new species is named in honor of Miss Danira León, the first author's much-loved daughter.

This new species is close to *C. caudatum* L., a widespread species in tropical Mesoamerica and northern South America, whose main resemblance is the shiny character of the upper leaf surface due to small shiny scales, although such scales seem to be only present in this new taxon at low density on young leaves. Superficially, the shape of the leaves resembles those of *C. affine* D. Don, but the flowers differ significantly. A comparison of the new species with the two species mentioned above is presented in Table 1.

The type locality has been explored botanically only once. This island sector probably harbors more interesting plants.

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